

REMARKS

Claims 1-14 are pending in the current Application. Claims 1, 4-7, 11, and 12 are rejected under 35 U.S.C. §103(a) as being obvious over the article, "Brewing and Using Tea," written by Elain R. Ingham (Ingham). Claims 1, 3-6, 8, and 11, are rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,583,045 issued to Finn (Finn). Claims 1, 2, 4, 5, 9-14 are rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. U.S. Patent No. 5,417,736 issued to Meyer (Meyer).

Rejection under 35 U.S.C. §103(a) (Ingham)

Referring to the instant invention, independent claim 1 is directed toward aeration apparatus for increasing the beneficial count of beneficial organisms in liquid compost tea compositions within a container. The apparatus comprises an air provision capacity of at least approximately 350-500 ft³/min, which delivers air to an air diffuser via an air conduit with at least a generally vertical portion. The air diffuser transmits air into liquid compost tea in the container, in which the apparatus is positioned, through air bubbling apertures that are disposed within the surface of the air diffuser.

Ingham discloses an apparatus that uses a pump, multiple air tubing, a gang valve, and three bubblers. The pump delivers air to the gang valve, which is limited to three ports. A pliable and elastic tube attaches to each port and extends down into a compost tea mixture within a container. The apparatus is limited to three bubblers that are loosely positioned inside the container and connect to the other end of the elastic tubes. Additionally, a mixing device such as a stick is required to stir the compost mixture. After each stirring, the bubblers need to be rearranged at the bottom of the container because they are loosely positioned.

Independent claim 1 and dependent claims thereof are patentable under §103 over Ingham because there is no suggestion or motivation in the article to modify the disclosed apparatus to derive the present invention.

Independent claim 1 and dependent claims thereof are patentable under §103 over the article because Ingham does not teach or suggest all the claim limitations. See MPEP

2143.03. Ingham does not teach or suggest the claim limitation in claim 1 regarding “a diffuser having a plurality of air bubbling apertures disposed within a surface thereof for transmittal of air therethrough.” Ingham instead incorporates six additional elements to achieve the result of this claimed limitation. Namely, these six elements are: one gang valve, three bubblers, and three additional tubes. In the present invention, the need for a gang valve and three bubblers is obviated because the diffuser has a plurality of air bubbling apertures disposed within its surface and therefore can be directly attached to the conduit that feeds air from the blower. Moreover, there is no need for three additional tubes that attach at one end to the gang valve ports and at the other end to the bubblers, because the diffuser is itself the air delivery and the air bubbling device. Therefore, the article does not expressly teach or suggest these claim limitations.

Additionally, the examiner correctly notes that Ingham lacks a disclosure of the airflow capacity of the air pump. Independent claim 1 recites “an air blower having an air provision capacity of at least approximately 350-500 ft/min.” In support of finding the present invention obvious over Ingham, however, the Examiner reasons that, “the article does recognize the relationship between the amount of oxygen available and the growth and viability of the aerobic microorganisms.” To the contrary, the recognition of such a relationship is not sufficient to render the present invention obvious. The mere fact that references can be modified does not render the resultant obvious unless the prior art also suggests the desirability of the modification. See MPEP 2143.01. Although a prior art device “may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.” *In re Mills*, 916 F.2d 680, 682, 16 USPQ2d 1430, 1432 (Fed. Cir. 1990). The facts in *In re Mills* resemble the facts in this application. There, claims were directed toward an apparatus for producing an aerated cementitious composition by drawing air into the composition by driving the output pump at a capacity greater than the feed rate. The prior art reference taught that the feed means can be run at a variable speed. However, the court found that this does not require that the output pump be run at the claimed speed so that air is drawn into the mixing chamber and entrained in the ingredients. *Id.*; See MPEP 2143.01. Similarly in the instant invention, the claims specify minimum pump capacity range proximity in order for the aeration apparatus to

increase the beneficial count of beneficial organisms in liquid compost tea compositions.

Although Ingham recognizes a relationship between oxygen and growth of aerobic microorganisms, it does not require that the pump be run at the claimed capacity, to account for sufficient aeration to sufficiently increase the beneficial count of beneficial organisms in liquid compost tea compositions.

Furthermore, Ingham does not implicitly teach or suggest the modifications that are required to achieve the claimed limitation associated with the air diffuser of claim 1 because the combination of the teachings of the article and the knowledge of one of ordinary skill in the art would not have suggested the required modifications to those of ordinary skill in the art. See MPEP 2143.01; See *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). This is evident from Ingham because Ingham was written by Dr. Elaine Ingham, who is the president and director of research at Soil Foodweb, Inc. and a research associate Professor at Oregon State University. Based on her credentials, Dr. Ingham is one of extraordinary skill in the art, yet the apparatus of her teaching does not teach or suggest the advantageous use of the air diffuser of claim 1. These advantages include less costs associated with manufacturing, assembly, and maintenance owing to less components. In addition, where Dr. Ingham's apparatus is limited to three bubblers, the instant invention makes possible the presence of numerous apertures on the surface of the air diffuser, which provides for better aeration of the compost tea composition. Lastly, since in the present invention the apertures are disposed on the air diffuser surface, the need to periodically rearrange the bubblers, as instructed in the article, is obviated. Therefore, since the present invention was not obvious to Dr. Ingham, who is one of extraordinary skill in the art, the invention was also not obvious to one of ordinary skill in the art at the time of filing in view of this piece of prior art. An additional indicia of unobviousness is that the present invention omits the gang valve, three bubblers, and three tubes used in the apparatus of the article while their function is both retained and improved as described above. MPEP 2144.04. Independent claim 1 and the dependent claims thereof are therefore patentable over Ingham.

Rejection under 35 U.S.C. §103(a) (Finn)

The Examiner rejects claims 1, 3-6, 8 and 11 under 35 U.S.C. 103(a) as being unpatentable over Finn. Finn discloses a compost curing and odor control system in which biofilters are disposed in overlying relation to the compost curing area. The compost curing area has an air floor situated above an air plenum that draws air from a PVC duct, which in turn is supplied with air with fans. The air is then transferred from the air plenum through the air floor, which is made from a series of planks abutted lengthwise with a narrow slit between them. The construction of planks is made up of concrete and reinforced steel. Above the air floor is the compost retention area wherein a compost turning mechanism is utilized to aid the aeration of the compost.

Independent claim 1 and dependent claims thereof are patentable under §103 over the Finn because Finn is void of any motivation or suggestion to be modified to the present invention. An examination of the diverging goals of Finn and the present invention will clarify Finn's failure to teach or suggest the claim limitations present in the instant invention. Finn is primarily concerned with decomposing and deodorizing waste of all sorts in order to provide for efficient land fill use. As a byproduct, the Finn apparatus may in certain applications produce compost suitable for agricultural use; however, the absence of any teaching that is specific to the goal of compost aeration for increasing the beneficial count of beneficial organisms in liquid compost tea compositions is indicative that one of ordinary skill in the art will not be motivated by Finn to derive at the present invention.

The Applicant respectfully asserts that the Examiner mischaracterizes the Finn apparatus in stating, "a pvc air conduit (32), vertically arranged, and connected to an air diffuser in the form of a planar floor (10)". To the contrary, the PVC duct in Finn supplies air to an air plenum (14)—not to the air floor (10)—which is located below the air floor (10). This distinction is crucial because it is indicative that Finn does not teach or suggest all of the claim limitations of claim 1 in the instant invention and thus, Finn does not render the present invention obvious. As claimed, the present invention includes an air diffuser attached to the effluent opening of a vertical portion of an air conduit. If this limitation was introduced in the

Finn apparatus, it would render the Finn apparatus unsatisfactory for its intended purpose. This modification would require that the PVC air conduit in Finn be directly attached to the air floor (10). This modification would prevent all air supply from reaching the compost because the PVC air duct in Finn is adjacent to the first plank in the air floor and the planks (12) are made of concrete. Therefore, to address the intended purpose in Finn, the air is required to be stored in an air plenum (14) that spans the length of the air floor and has a pressure different from atmospheric pressure so that air is forced up through the slits (26) between the air floor planks. Since modifying Finn to adopt the limitation associated with the air diffuser in claim 1 would render the Finn apparatus unsatisfactory for its intended purpose, there is no suggestion or motivation for one of ordinary skill in the art to make the proposed modification. See *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Accordingly, the instant invention is patentable over Finn.

It is important to note that Finn aims at processing raw waste material for efficient land fill use, which as a byproduct may produce compost within which bacteria may be present that may be beneficial for agricultural soil. That byproduct, which is one of the end products of inventions like Finn, may be one type of compost that is only one starting ingredient of the present invention. The present invention provides for an apparatus that uses the starting ingredients, such as compost, and further mixes it with water to make liquid compost tea and improves it for agricultural use by increasing the beneficial count of beneficial organisms in the liquid compost tea composition. Therefore, the instant invention is tailored to further processing of one of the byproducts of Finn using an apparatus that is distinct from the apparatus in Finn as described above and thus is patentable over Finn.

Rejection under 35 U.S.C. §103(a) (Meyer)

The Examiner rejects claims 1, 2, 4, 5 and 9-14 under 35 U.S.C. 103(e) as being unpatentable over Meyer. Meyer discloses a method for aerobic composition of organic waste material using high flow-rate aeration, compaction, and percolation of moisture that is released. In Meyer, a blower is attached to an air conduit with perforated portions branching out into a bag that holds organic waste material. Exhaust vents are incorporated to maintain a homeostatic airflow and water injection means are added to accelerate decomposition of the contents. The primary object of Meyer is to provide a method that accelerates decomposition of organic waste in large volumes, which is inexpensive, simple, and odor-free. Other objects of that invention include such decomposition without the use of chemicals, computerized equipment, filler material, and sewage sludge.

Independent claim 1 and dependent claims thereof are patentable under §103 over Meyer because Meyer does not suggest or motivate modifications to achieve the instant invention and also, modifying Meyer to adopt the limitations present in independent claim 1 of the present invention would render the method in Meyer unsatisfactory for its intended purpose. MPEP 2143.01; See *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). The terminology and drawings used in Meyer demonstrate that the target of decomposition in that invention is solid waste, whereas, claim 1 of the present invention is specifically limited to an aeration apparatus for increasing the beneficial count of beneficial organisms in liquid compost tea. For example, in Meyer, column 3, lines 39 to 42 state, “packing the container with an organic material...” and column 6, lines 14 to 25, discuss the addition of moisture when the waste material is extremely dry. The latter continues to state, “with most organic wastes, the natural moisture content has been found sufficient...”. The use of the terminology such as “packing”, “extremely dry”, and “moisture content” implies that the contents are solids that contain moisture. This inference is supported by the drawings and the description of the bag that holds the contents because the bag is a thin plastic bag akin to a large garbage bag. If liquid compost tea was placed in the Meyer bag with exhaust vents, the Meyer method would be rendered unsatisfactory for its intended purpose, namely, compaction of solid organic waste.

This distinction between the two inventions is also crucial because it illuminates the significance of the air diffuser of claim 1, especially in the coiled embodiment. The Examiner correctly notes that Meyer is silent as to non-linear shapes of the conduit that distributes air in Meyer. The instant invention optimizes a novel air diffuser that is practical for transmitting air into liquid compost tea based on the material properties of liquid compost tea. Liquid compost tea allows for permissive flow of air through the liquid compost tea, whereas, solid waste does not. Therefore, to aerate solid waste, there is a need for a series of aerating conduits as in Meyer. Since the target of aeration in the present invention is liquid compost tea, the need for a series of air distribution mechanisms, is obviated by the use of an air diffuser having a plurality of air bubbling apertures disposed within its surface for transmittal of air into the liquid compost tea. Accordingly, the air diffuser is a second limitation in claim 1 of the present invention, which if incorporated into Meyer, it would render Meyer unsatisfactory for its intended purpose of aeration and compaction of solid organic waste. Since modifying Meyer to derive at the present invention would render Meyer unsatisfactory for its intended purpose and since there is significance in features claimed in the present invention toward which Meyer is silent, independent claim 1 and dependent claims thereof in the instant invention are patentable under §103 over Meyer.

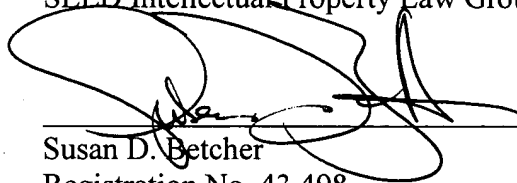
Similar to Finn, Meyer aims at processing raw waste material for efficient land fill use, which as a byproduct may produce compost within which bacteria may be present that may be beneficial for agricultural soil. That byproduct, which is one of the end products of inventions like Finn and Meyer, may be one type of compost that is only one starting ingredient of the present invention. The present invention provides for an apparatus that uses the starting ingredients, such as one of Meyer's end products, and further mixes it with water to make liquid compost tea and improves it for agricultural use by increasing the beneficial count of beneficial organisms in the liquid compost tea composition. Therefore, the instant invention is tailored to further processing of one of the byproducts of Meyer using an apparatus that is distinct from the method in Meyer as described above and thus is not obvious under §103 over Meyer.

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All of the claims remaining in the application are now clearly allowable. Based on the foregoing, favorable consideration and a Notice of Allowance are earnestly solicited. Applicant's attorney wishes to express her willingness to engage in a telephone interview to further the status of this application if any further concerns need to be addressed.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC



Susan D. Betcher
Registration No. 43,498

SDB:mt

Enclosure:

Postcard

701 Fifth Avenue, Suite 6300
Seattle, Washington 98104-7092
Phone: (206) 622-4900
Fax: (206) 682-6031

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